



Who is dying with HIV/AIDS and how has this changed over time?

June 2005

Introduction

The death data in this fact sheet describe *all* deaths among people reported with HIV/AIDS in Massachusetts including deaths from *non-HIV related* causes, such as motor vehicle crashes, drug overdoses and suicides. Therefore, the number of deaths reported here will vary from the number of *HIV-related* deaths reported in *Massachusetts Deaths* by the Massachusetts Department of Public Health, Center for Health Information, Statistics, Research and Evaluation.

Over time there has been an increase, decline and then a leveling-off in the number of deaths among people reported with AIDS in Massachusetts. In the five year period from 1999 to 2003, the number of deaths annually among people reported with HIV infection and AIDS has remained fairly steady, fluctuating between 313 and 393 deaths. This stability in numbers of deaths among people reported with HIV/AIDS may indicate that improvements in care and treatment are no longer able to affect the same reductions in HIV/AIDS-related mortality as they once did.

Trends in mortality among people reported with HIV/AIDS reflect shifts in HIV infection and AIDS diagnoses as well as highlight differential survival across groups. For example, in the past five years, females have accounted for an increasing proportion of both AIDS diagnoses and deaths among people reported with HIV/AIDS. HIV infection diagnosis patterns across race/ethnicity are mirrored in elevated mortality rates of black and Hispanic individuals compared to white individuals. Regarding exposure mode, over half of all deaths from 1999 to 2003 were among people with a primary reported risk of injection drug use, possibly highlighting a differential survival experienced by this group.

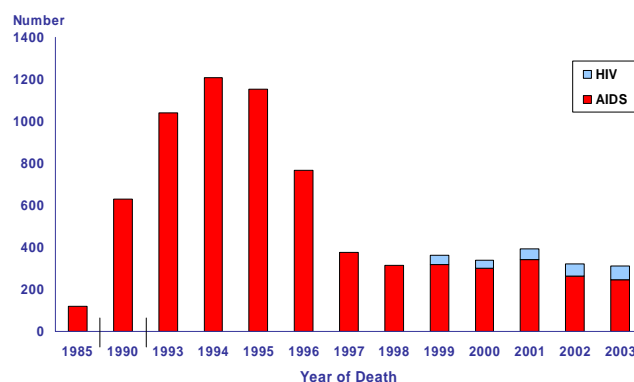
The following analyses describe trends in deaths among people reported with HIV/AIDS in Massachusetts in greater detail.

Rank of HIV/AIDS among leading causes of death in 2002¹:

- In 2002, HIV/AIDS was the 23rd leading cause of death in Massachusetts.
- HIV/AIDS was the 6th leading cause of death for Hispanic individuals, the 8th leading cause of death for black individuals and the 25th leading cause of death for white individuals.
- Among 25-44 year olds, HIV/AIDS was the 7th leading cause of death in 2002; seven years prior, it was the leading cause of death in this age group.

General Statistics:

Figure 1. Number of Deaths Among People Reported with HIV Infection and AIDS by Year of Death: Massachusetts, 1985-2003



Note: Death data for people with HIV who had not yet progressed to AIDS are not available before 1999 and therefore not included here. Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/2004

- After reaching a peak of 1,207 in 1994, deaths among people reported with AIDS declined each year until 1998, when there were 316 deaths. (Death data for people reported with HIV infection (non-AIDS)* are not available prior to 1999 because HIV infection was not a reportable condition before that time.)
- From 1999 to 2003, the annual total number of deaths of people reported with HIV (non-AIDS)* and AIDS ranged from 313 to 393 deaths.

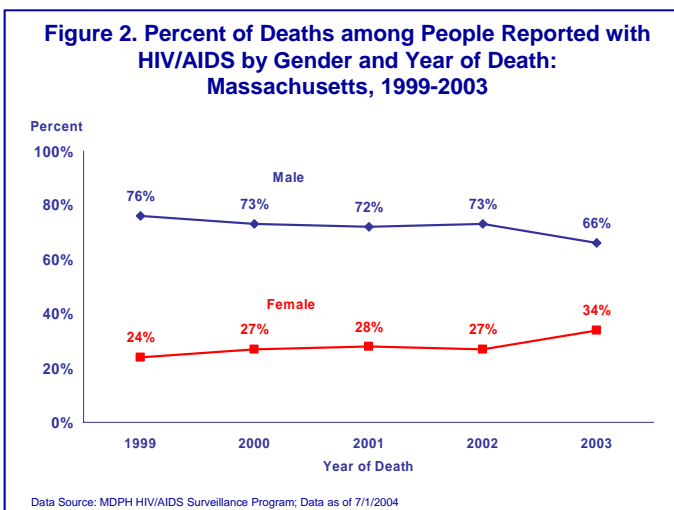
- The proportion of deaths among people with HIV (non-AIDS)* of total deaths among people reported with HIV/AIDS increased from 12% in 1999 to 22% in 2003.

* *People with HIV infection (non-AIDS) refers to those who were reported with an HIV infection diagnosis and did not progress to AIDS before death.*

Deaths among people reported with HIV infection compared to deaths among people reported with AIDS:

- Among people dying with HIV infection (non-AIDS), there is a higher proportion of injection drug use as a risk of HIV exposure: 61% of people reported with HIV infection who died from 1999 to 2003 were reported with injection drug use as their risk, compared to 52% of people who died with AIDS.

Deaths among people reported with HIV/AIDS by gender:



- The proportion of deaths among people reported with HIV/AIDS who were female increased from 24% in 1999 to 34% in 2003.
- While the number of deaths of males reported with HIV/AIDS *decreased* by 24% from 1999 to 2003 (from 275 to 208) the number of deaths of females *increased* by 18% (from 89 to 105).

Deaths among people reported with HIV/AIDS by place of birth:

- From 1999 to 2003, deaths among people reported with HIV/AIDS by place of their birth remained fairly stable, with 76% to 80% of the deaths among people born in the U.S., 12% to 18% among people born in Puerto Rico or another U.S. dependency, and 5% to 8% among people born outside the U.S.

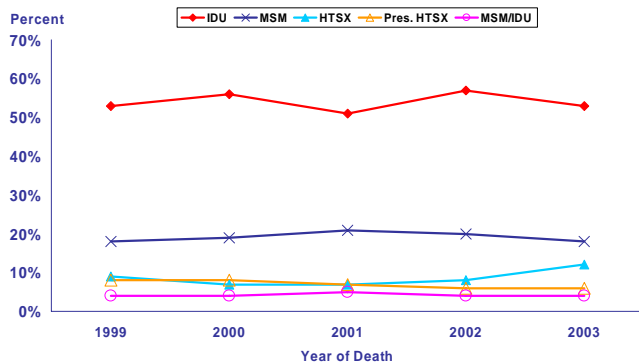
Deaths among people reported with HIV/AIDS by race/ethnicity:

- From 1999 to 2003, the proportion of deaths of people reported with HIV/AIDS who were white ranged from 46% to 55%, black from 24% to 31% and Hispanic from 18% to 25%.
- The number of deaths of people reported with HIV/AIDS who were Hispanic decreased by 24% from 1999 to 2003 (from 91 to 69), black by 14% (from 93 to 80) and white by 7% (from 175 to 162).
- While the number of deaths of white males *decreased* by 24% from 1999 to 2003 (from 139 to 106), the number of deaths of white females *increased* by 56% (from 36 to 56).
- While the number of deaths of black males *decreased* by 29% from 1999 to 2003 (from 68 to 48), the number of deaths of black females *increased* by 28% (from 25 to 32).
- From 1999 to 2003, the number of deaths of Hispanic males decreased by 19% (from 64 to 52) and the number of deaths of Hispanic females decreased by 37% (from 27 to 17).

Deaths among people reported with HIV/AIDS by exposure mode:

- From 1999 to 2003, the distribution of deaths among people reported with HIV/AIDS by exposure mode remained fairly stable, with over 50% of deaths each year in people with a primary reported risk of injection drug use and 18% to 21% in people with a risk of male-to-male sex.

Figure 3. Percent of Deaths among People Reported with HIV/AIDS by Mode of Exposure and Year of Death: Massachusetts, 1999-2003

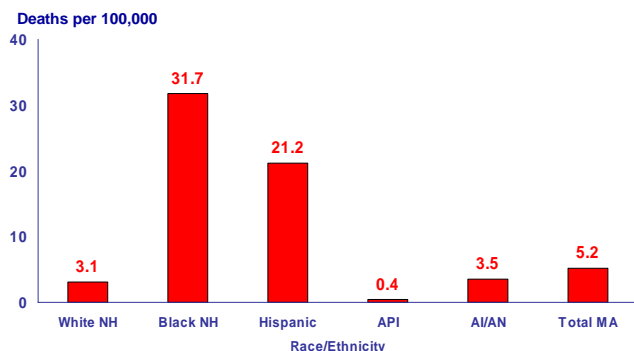


Note: please see Table 7 in appendix for number and percent of deaths by exposure mode.
IDU= Injection Drug Use, MSM=Male-to-Male Sex, HTSX=Heterosexual Sex, Pres.=Presumed Heterosexual Sex;
Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/2004

- From 1999 to 2003, the proportion of deaths among people reported with HIV/AIDS with a reported risk of heterosexual sex ranged from 7% to 12%, of presumed exposure through heterosexual sex from 6% to 8%, of male-to-male sex and injection drug use from 4% to 5%, and of all other risks 2% to 4%.
- From 1999 to 2003, the number of deaths among males reported with HIV/AIDS with a risk of injection drug use decreased by 27% (from 141 to 103), while the number of females with a risk of injection drug use increased by 21% (from 52 to 63).

Average annual rate of death among people reported with HIV/AIDS by race/ethnicity, 2001-2003:

Figure 4. Age-Adjusted Rate of Death per 100,000 Population Among People Reported with HIV/AIDS by Race/Ethnicity: Massachusetts, Average Annual Rate 2001-2003



1 Population sizes for rate calculations are based on year 2000 population estimates from the MDPH Center for Health Information, Statistics, Research and Evaluation, all rates are age-adjusted using the 2000 US standard population; NH= Non-Hispanic, API = Asian/Pacific Islander; AI/AN = American Indian/Alaska Native; Data Source: MDPH HIV/AIDS Surveillance Program, Data as of 7/1/04

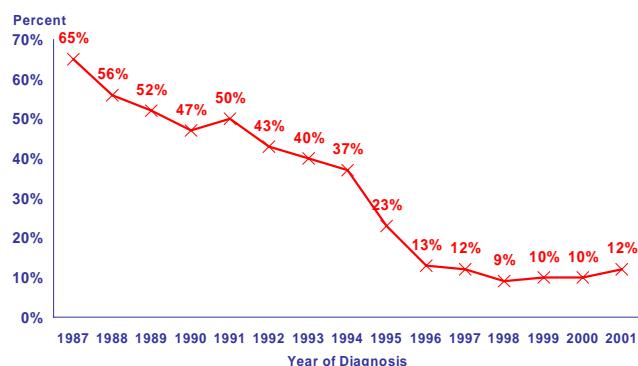
- As of July 1, 2004, for every 100,000 people in Massachusetts, an average of 5.2 people died with a reported diagnosis of HIV/AIDS each year within the years 2001 to 2003 (rate adjusted for age).
- The age-adjusted average annual rate of death within 2001 to 2003 for black individuals reported with HIV/AIDS (31.7 per 100,000) is 10 times greater, and for Hispanic individuals (21.2 per 100,000) is 7 times greater than for white individuals (3.1 per 100,000). These rates reflect HIV diagnosis by race/ethnicity: black individuals are diagnosed with HIV infection at 13 times and Hispanic individuals at 8 times the rate of white individuals.

Case fatality rates by exposure mode and race/ethnicity:

- The HIV/AIDS case fatality rate represents the proportion of people reported with HIV/AIDS who died in a specific time period. (See Appendix for a full explanation of case fatality rate calculations).
- From 2001 to 2003, for every 100 people diagnosed and living with HIV/AIDS there was an annual average of 2.4 deaths, or a case fatality rate of 2.4%.
- By exposure mode, the highest average case fatality rate (2001 to 2003) was for people with a primary reported risk of injection drug use at 4.0%, followed by male-to-male sex and injection drug use at 3.1%, other exposure modes (including perinatal and blood/blood products) at 2.7%, heterosexual sex at 1.5%, male-to-male sex at 1.4%, and heterosexual sex with partners of unknown risk and HIV status (presumed heterosexual) at 1.2%.
- The average case fatality rate from 2001 to 2003 did not vary substantially by race/ethnicity: the case fatality rate was 2.6% among white individuals, 2.5% among black individuals and 2.0% among Hispanic individuals.
- The average case fatality rate from 2001 to 2003 was 2.3% for white males, 2.7% for black males, and 2.1% for Hispanic males.
- The average case fatality rate from 2001 to 2003 was 3.5% for white females, 2.2% for black females, and 1.7% for Hispanic females.

Trends in survival after an AIDS diagnosis:

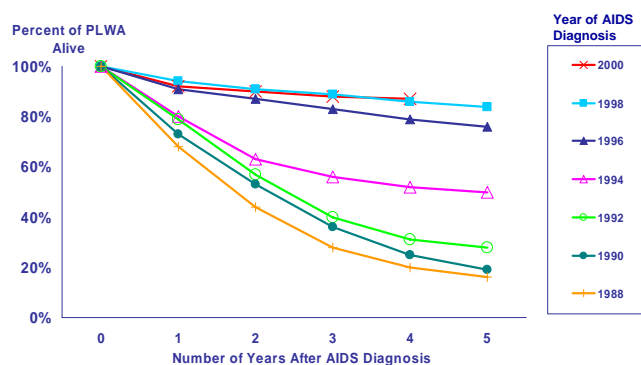
Figure 5. Percent of People Who Died Within 2 Years of an AIDS Diagnosis by Year of AIDS Diagnosis: Massachusetts, 1987-2001



Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/2004

- From 1987 to 1998, the proportion of people diagnosed with AIDS who died within two years of their diagnosis declined from 65% to 9%.
- From 1999 to 2001, the proportion of people diagnosed with AIDS who died within two years of their diagnosis was relatively stable at 10% to 12%.

Figure 6. Percent of People Living with AIDS (PLWA) Who Are Alive 1-5 Years After an AIDS Diagnosis by Year of AIDS Diagnosis: Massachusetts, 1988-2000



NOTE: Trend lines are incomplete for more recent years of diagnosis because fewer years of observation are available; Data Source: MDPH HIV/AIDS Surveillance Program; Data as of 7/1/2004

- In comparing survival trends for people diagnosed in 1988 with people diagnosed in more recent years, it is evident that the proportion of people who survive with AIDS is greater for each time period. For people diagnosed in 2000 survival leveled off compared with 1998. This may indicate that advances in treatment and care are no longer able to sustain dramatic reductions in mortality as were seen in earlier years.

Trends in progression to AIDS after HIV infection diagnosis:

- Of 1,295 people diagnosed with HIV infection in 1999, 28% were concurrently diagnosed with AIDS (diagnosed within 2 months). By 1 year after HIV infection diagnosis, 40% had been diagnosed with AIDS, by 2 years 44%, by 3 years 47%, by 4 years 48%, and by 5 years 49% had been diagnosed with AIDS. Fifty-one percent have not progressed to AIDS.
- The time for progression to AIDS among people diagnosed with HIV infection from 2000 to 2003 follows a very similar distribution as those diagnosed in 1999 (see table 15 of the appendix.) This may suggest that treatment and care advances over the 5-year period have not reduced AIDS-related morbidity. Alternatively, this trend could be due to reporting patterns affecting the reported dates of HIV infection and AIDS diagnosis. At this point it is still too soon to perform a deeper analysis of progression to AIDS due to the small number of years of the HIV reporting system (which was implemented in 1999). Future survival and progression analyses will help to identify sub-populations who may be experiencing differential morbidity and mortality.

Data Sources:

- ¹ Data included here represent HIV/AIDS-related deaths from Massachusetts Deaths 2002, Center for Health Information, Statistics, Research and Evaluation

All HIV/AIDS Case Data: Massachusetts Department of Public Health (MDPH) HIV/AIDS Surveillance Program, Data as of July 1, 2004

For more detailed information and a description of data limitations please see "HIV/AIDS in Massachusetts: An Epidemiologic Profile," available online at www.mass.gov/dph/aids